

SUMMARY

Pursuant to Section 309 of the Communications Act of 1934, as amended, 47 U.S.C. § 309, and Parts 25 and 100 of the Commission's Rules, 47 C.F.R. § § 25 and 100, EchoStar Satellite Corporation ("ESC"), Directsat Corporation ("Directsat") and EchoStar DBS Corporation ("EchoStar DBS") hereby file this joint application for authority to make certain minor modifications to their Direct Broadcast Satellite ("DBS") authorizations -- the DBS licenses of ESC and Directsat and the DBS construction permit of EchoStar DBS.^{1/} ESC also applies for authority to launch EchoStar's new satellite to the 119.2° W.L. orbital location and EchoStar DBS applies for authority to operate a satellite at the 148° W.L. orbital slot.^{2/}

Currently, ESC's license covers 11 channels at 119° W.L.^{3/} Directsat's license covers 10 channels, also at 119° W.L.^{4/} ESC and Directsat use these 21 assigned channels through two 16-transponder satellites launched in December 1995 and September 1996, respectively. For its part, EchoStar DBS has a construction permit for 24 channels at the 148° W.L. orbital location.^{5/}

^{1/} The ultimate parent of all three applicants is EchoStar Communications Corporation ("EchoStar"). The three applicants are referred to collectively in this application as "EchoStar."

^{2/} EchoStar files this application in conjunction with other requests filed today by Directsat, Direct Broadcasting Satellite Corporation ("DBSC"), ESC and EchoStar DBS, seeking a realignment of those permittees' milestones to effectuate the satellite deployment plan proposed herein.

^{3/} See *EchoStar Satellite Corporation*, 7 FCC Rcd. 1765, 1770 (1992).

^{4/} See *Directsat Corporation*, 8 FCC Rcd. 7962, 7964 (1993).

^{5/} See *EchoStar DBS Corporation*, 11 FCC Rcd. 16291, 16295 (1996).

By the instant applications, EchoStar seeks authority to replace one of the two 16-transponder satellites currently operating at 119° W.L. with a new switchable 32/16-transponder satellite due to be launched in March 1998. ESC's satellite currently operating at 119° W.L. will be relocated to 148° W.L. and will operate over 16 of the 24 channels assigned to EchoStar DBS.

Grant of this application will allow EchoStar to respond to an extraordinary challenge never before faced by any U.S. DBS licensee -- integrating several satellites operating at widely scattered orbital locations into a seamless DBS offering. Launch of a new 32-transponder satellite to the 119.2° W.L. orbital location will allow the ESC satellite currently operating at 119° W.L. to move to 148° W.L. and provide 16 channels of DBS service almost immediately. At the same time, with a 32-transponder and a 16-transponder satellite at 119° W.L., EchoStar will ensure centrally located spare capacity that can back up or complement satellites at *three* orbital locations during the critical period when EchoStar will be integrating its offerings at 119.2° W.L., 148° W.L. and 61.5° W.L.

The launch of a state-of-the-art satellite to 119.2° W.L. will allow EchoStar to provide Alaska and Hawaii with more than 120 channels of its main, full-CONUS offering, including cable channels and superstations. From the 148° W.L. slot, EchoStar will also be able to offer DBS service to Alaska. The combination of relocating a satellite from 119° W.L. to 148° W.L. and launching a more powerful 32-transponder satellite to 119.2° W.L. will thus enable EchoStar to serve Alaska from two orbital locations and Hawaii from one orbital location.

Finally, the proposed modifications will not entail the use of any additional spectrum resources, will not cause harmful interference to any authorized user of the spectrum,

will not cause substantial additional interference compared to EchoStar's current authorizations or any further substantial departures from the parameters of the Region 2 ITU Plan compared to the characteristics of the already published satellites.

Since EchoStar currently plans to launch its next satellite in March 1998, EchoStar respectfully requests expedited consideration of the instant application.

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	i
I. INTRODUCTION AND BACKGROUND	3
II. THE PROPOSED MODIFICATIONS WILL SERVE THE PUBLIC INTEREST	4
A. The Proposed Minor Modifications Will Allow Rapid Commencement of Service from 148° W.L. and Free Up Valuable In-Orbit Spare Capacity at a Critical Period of Time	4
B. The Proposed Modifications Will Facilitate DBS Service to Alaska and Hawaii	6
III. THE PROPOSED MINOR MODIFICATIONS WILL NOT CAUSE SUBSTANTIAL ADDITIONAL INTERFERENCE TO OTHER USERS OF THE SPECTRUM OR FURTHER DEPARTURES FROM THE PARAMETERS OF THE REGION 2 ITU PLAN	7
IV. APPLICATION FOR LAUNCH AUTHORITY	9
V. APPLICATION FOR OPERATIONAL AUTHORITY	9
VI. REQUEST FOR WAIVER OF SECTION 100.53 GEOGRAPHIC SERVICE REQUIREMENT	10
A. The Geographic Service Requirement	11
B. EchoStar's Plan for Service From Multiple Orbital Locations	11
C. EchoStar's Proposed Deployment Plan Will Optimize Service to Alaska and Hawaii	13
VII. WAIVER PURSUANT TO SECTION 304 OF THE ACT	14
VIII. CONCLUSION	14

DEC 30 1997

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

Federal Communications Commission
Office of Secretary

_____)	<u>EXPEDITED CONSIDERATION</u>
In the Matter of)	<u>REQUESTED</u>
)	
EchoStar Satellite Corporation)	File No. DBS-88-01/68-SAT-ML-96/___
Directsat Corporation)	File No. DBS-88-02/6-SAT-ML-97/___
EchoStar DBS Corporation)	File No. 74-SAT-P/L-96/___
)	
Application for Authority to Make)	
Minor Modifications to Direct)	
Broadcast Satellite Authorizations,)	
Launch and Operation Authority)	
_____)	

**APPLICATION FOR MINOR MODIFICATIONS
OF DBS AUTHORIZATIONS, LAUNCH
AND OPERATION AUTHORITY**

Pursuant to Section 309 of the Communications Act of 1934, as amended,
47 U.S.C. § 309, and Parts 25 and 100 of the Commission's Rules, 47 C.F.R. § § 25 and 100,
EchoStar Satellite Corporation ("ESC"), Directsat Corporation ("Directsat") and EchoStar DBS
Corporation ("EchoStar DBS") hereby file this joint application for authority to make certain
minor modifications to their Direct Broadcast Satellite ("DBS") authorizations -- the DBS
licenses of ESC and Directsat and the DBS construction permit of EchoStar DBS.^{1/} ESC also

^{1/} The ultimate parent of all three applicants is EchoStar Communications Corporation ("EchoStar"). The three applicants are referred to collectively in this application as "EchoStar."

applies for authority to launch EchoStar's new satellite to the 119.2° W.L. orbital location and EchoStar DBS applies for authority to operate a satellite at the 148° W.L. orbital slot.^{2/}

Currently, ESC's license covers 11 channels at 119° W.L. (odd-numbered channels 1-21).^{3/} Directsat's license covers 10 channels (even-numbered 10-20), also at 119° W.L.^{4/} ESC and Directsat use these 21 assigned channels through two 16-transponder satellites launched in December 1995 and September 1996, respectively. For its part, EchoStar DBS has a construction permit for 24 channels at the 148° W.L. orbital location (odd and even channels 1-17, odd-numbered channels 19-31).^{5/}

By the instant applications, EchoStar seeks authority to replace one of the two 16-transponder satellites currently operating at 119° W.L. with a new switchable 32/16-transponder satellite due to be launched in March 1998. EchoStar's current plan is to use the new satellite for all of ESC's 11 assigned channels and 5 of Directsat's assigned channels. The remaining 5 channels assigned to Directsat will initially be carried by Directsat's existing satellite. ESC's satellite currently operating at 119° W.L. will be relocated to 148° W.L. and will operate over 16 of the 24 channels assigned to EchoStar DBS -- odd-numbered channels 1-31.

^{2/} EchoStar files this application in conjunction with other requests filed today by Directsat, Direct Broadcasting Satellite Corporation ("DBSC"), ESC and EchoStar DBS, seeking a realignment of those permittees' milestones to effectuate the satellite deployment plan proposed herein.

^{3/} See *EchoStar Satellite Corporation*, 7 FCC Rcd. 1765, 1770 (1992).

^{4/} See *Directsat Corporation*, 8 FCC Rcd. 7962, 7964 (1993).

^{5/} See *EchoStar DBS Corporation*, 11 FCC Rcd. 16291, 16295 (1996).

I. INTRODUCTION AND BACKGROUND

In 1989, the Commission granted ESC and Directsat conditional permits to provide DBS service from "two or more satellites delivering 11 channels to each half of the United States, or one or more satellites delivering 11 channels to the continental United States."^{6/} In 1992, the Commission assigned 11 channels to ESC to provide service from 119° W.L.^{7/} In 1993, the Commission assigned 10 channels to Directsat, also at 119° W.L., for the same purpose.^{8/}

ESC launched its first satellite to the 119° W.L. orbital location in December 1995, and since March 1996 has provided continuous DBS service to customers throughout the continental United States.^{9/} Directsat launched its first satellite to the 119° W.L. orbital location in September 1996, which allowed EchoStar to integrate ESC's and Directsat's satellites into an offering of about 125-130 video channels.^{10/}

In January 1996, EchoStar DBS was the winning bidder in a Commission auction for 24 channels at 148° W.L.^{11/} In December 1996, the Commission authorized EchoStar DBS to

^{6/} *Continental Satellite Corporation*, 4 FCC Rcd. 6292, 6300 (1989).

^{7/} *EchoStar Satellite Corporation*, 7 FCC Rcd. 1765, 1770 (1992). ESC was assigned the odd-numbered channels 1-21.

^{8/} *Directsat Corporation*, 8 FCC Rcd. 7962, 7964 (1993). Directsat was assigned its even-numbered channels 2-20.

^{9/} *EchoStar Satellite Corporation*, 11 FCC Rcd. 3015, 3015 (1996).

^{10/} *Directsat Corporation*, 11 FCC Rcd. 10575, 10577 (1996).

^{11/} See *EchoStar DBS Corporation Wins 24 DBS Channels at the 148 Degree Orbital Location With a High Bid of \$52,295,000*, FCC Press Release (Jan. 26, 1996).

construct, launch and operate its DBS system at 148° W.L.^{12/} The construction and launch milestones for this satellite are December 2000 and 2002, respectively.^{13/}

II. THE PROPOSED MODIFICATIONS WILL SERVE THE PUBLIC INTEREST

The Commission has a long-standing policy of allowing satellite licensees to incorporate the most advanced technologies into their systems to the greatest extent possible, to serve "the ultimate goal of service to the public."^{14/} The proposed modifications will further this goal. Specifically, the modifications sought in this application are in the public interest because they will allow EchoStar: (1) to rapidly commence service from 148° W.L.; (2) to make available valuable in-orbit spare capacity for a critical period of time; and (3) to bring high-quality DBS service for the first time to Alaska and Hawaii.

A. The Proposed Minor Modifications Will Allow Rapid Commencement of Service from 148° W.L. and Free Up Valuable In-Orbit Spare Capacity at a Critical Period of Time

Because each of the ESC and Directsat satellites has only 16 transponders, both are currently needed to provide the assigned 21 channels at 119° W.L. Launch of EchoStar's 32-transponder satellite to 119.2° W.L. will eliminate the need for two operational satellites at that slot. This also will allow relocation of ESC's 16-transponder satellite to 148° W.L. and permit speedy commencement of service from that location -- several years ahead of EchoStar DBS's construction and operation milestones of December 2000 and 2002.^{15/} Launch of a

^{12/} *EchoStar DBS Corporation*, 11 FCC Rcd. 16291, 16295 (1996).

^{13/} 47 C.F.R. § 100.19(b); *EchoStar DBS Corporation*, 11 FCC Rcd. 16291, 16295 (1996).

^{14/} *United States Satellite Broadcasting Company*, 7 FCC Rcd. 7247, 7250 (1992).

^{15/} *See EchoStar DBS Corporation*, 11 FCC Rcd. 16291, 16295 (1996).

32-transponder satellite to 119° W.L. will complement Directsat's 16-transponder satellite at that orbital location. This will create a valuable reservoir of centrally located in-orbit space capacity for possible use in case of need anywhere in EchoStar's constellation.

EchoStar's DBS system presents significant logistical and operational challenges. In addition to ESC's and Directsat's operational satellites at the 119° W.L. orbital location, another EchoStar subsidiary, DBSC, recently launched its first satellite to the 61.5° W.L. orbital location. With EchoStar's fourth satellite due to be launched in the first quarter of 1998, EchoStar will have more DBS satellites in orbit than any other U.S. licensee. In addition, because of the constraints of the Region 2 ITU allotment plan and EchoStar's scattered channel assignments, EchoStar's satellites are widely dispersed over the geostationary arc. In fact, the integration of satellites operating from as few as two different locations into a single integrated DBS offering has never been attempted by any U.S. DBS licensee. In light of the growing number of EchoStar satellites and the wide range of orbital locations they use, ensuring the most strategic possible deployment of EchoStar's satellite fleet is increasingly important. Thus, the availability of centrally located, in-orbit spare satellite capacity becomes an issue of considerable importance to system reliability.

Of course, EchoStar must accomplish these objectives within the capital constraints it is under as the only independent, entrepreneurial DBS operator. Moreover, EchoStar needs to devote as many in-orbit resources as possible to providing video programming in order to compete in the Multi-Channel Video Programming Distribution ("MVPD") market. In light of these constraints, EchoStar cannot currently afford to launch an in-orbit spare satellite.

Nevertheless, the proposed modifications will ensure the availability of centrally located in-orbit spare capacity for a limited but critical period of time.

B. The Proposed Modifications Will Facilitate DBS Service to Alaska and Hawaii

The proposed modifications will usher in the first-ever DBS service to Alaska and Hawaii, several years ahead of EchoStar DBS's milestones for the 148° W.L. location. While ESC and Directsat are not subject to an obligation to serve Alaska and Hawaii from 119.2° W.L.,^{16/} the proposed modifications will enable service to these two states from that location. This is a key benefit of the proposed deployment plan, as the two states will secure access to more than 120 channels of the main, full-CONUS offering of EchoStar, including the most popular cable channels and superstations. In addition, when relocated to the 148° W.L. orbital slot, ESC's satellite will be capable of serving Alaska with relatively small dishes. Alaskans will thus be able to enjoy DBS service from 148° W.L. as early as next year.^{17/}

Under the proposed modifications, Alaskans and Hawaiians will thus find their MVPD choices dramatically increased. Today, they are not offered DBS service, and can look only to cable operators to receive anything more than broadcast programming. EchoStar offers a solution that will by November 1998 result in the provision of at least 120 channels of

^{16/} The Commission's Rules require only *new* licensees to serve Alaska and Hawaii from any location if technically feasible. Older permittees such as ESC and Directsat need only provide service to Alaska and Hawaii from their *western* orbital locations in order not to relinquish their assignments at these locations. See 47 C.F.R. § 100.53.

^{17/} The satellite to be relocated to 148° W.L. will not serve Hawaii, and EchoStar is requesting a technical waiver of the Commission's rules in that respect. However, this waiver will allow EchoStar to provide Hawaii with more than 120 channels of cable channels and superstations as opposed to a complementary offering of local and niche programming that would be less valuable on a stand-alone basis. See below.

full-CONUS video programming to Hawaii and Alaska (in addition to service to Alaska from 148° W.L.). The Commission has long expressed concern that no DBS provider has chosen to serve Alaska and Hawaii.^{18/} Through these proposed minor modifications, EchoStar can swiftly rectify this situation.

III. THE PROPOSED MINOR MODIFICATIONS WILL NOT CAUSE SUBSTANTIAL ADDITIONAL INTERFERENCE TO OTHER USERS OF THE SPECTRUM OR FURTHER DEPARTURES FROM THE PARAMETERS OF THE REGION 2 ITU PLAN

This application proposes minor modifications that are not "substantial" and will neither significantly increase "the potential for interference" nor change "the proposed frequencies or orbital locations to be used."^{19/} Indeed, each of the applicants will still operate over the same orbital location and assigned spectrum: channels 1-23 (odd) at 119° W.L. for ESC, channels 2-20 (even) at 119° W.L. for Directsat, and channels 1-17 (odd and even) and 19-31 (odd) at 148° W.L. for EchoStar DBS.^{20/} Furthermore, as Dr. Barnett explains in the attached analysis, the requested modifications will not substantially increase the potential interference for any authorized user of the spectrum. Similarly, the modifications will not cause any substantial additional interference compared to EchoStar's current authorizations or further departures from the parameters of the Region 2 ITU Plan compared to those authorizations.^{21/} In fact, the new

^{18/} See, e.g., *In the Matter of Rules and Policies for the Direct Broadcast Satellite Service*, Report and Order, 11 FCC Rcd. 9712, 9762 (1995) ("DBS Order").

^{19/} Cf. 47 C.F.R. § 25.116(b).

^{20/} ESC's satellite to be relocated to the 148° W.L. will operate over a subset of EchoStar DBS's assignments (the 16 odd-numbered channels 1-31).

^{21/} Modifications that do not involve significant risks of increased interference with other

(continued ...)

satellite will not cause harmful or additional interference to or from any U.S. authorized user of the spectrum. Outside the U.S., the new satellite will provide better isolation to the Caribbean region. While the same higher EIRP values previously experienced with ESC's satellite southwest of the United States will now extend to a slightly larger area in the same region, Dr. Barnett believes that the differences are relatively slight and should not pose a substantial problem.

As the Commission is aware, the Telemetry, Tracking & Control ("TT&C") operations of ESC's satellite are in the C-band.^{22/} Dr. Barnett believes that C-band TT&C operations at the 148° W.L. location will not cause harmful interference to any U.S. licensee (the closest U.S. satellite is located at 139° W.L.). Further, Dr. Barnett opines that international coordination of those limited TT&C C-band operations at 148° W.L. should not present problems. Indeed, unlike the location where ESC's satellite is currently located, the 148° W.L. slot is far removed from the Canadian/Mexican portion of the C-band geostationary arc under the U.S.-Canada-Mexico trilateral agreement.^{23/} Thus, TT&C operations at the 148° W.L. slot do not require the elaborate coordination and prior consent process contemplated by the agreement, which ESC has had to follow with respect to the 119° W.L. slot.

^{21/} (... continued)

systems are routinely granted by the Commission. See *L/Q Licensee*, 11 FCC Rcd. 16, 410 (1996); *TRW Inc.*, 11 FCC Rcd. 20,419 (1996); *Motorola Satellite Communications, Inc.*, 11 FCC Rcd. 13,952 (1996); *PanAmSat Licensee Corp.*, 9 FCC Rcd. 1869 (1994); *GTE Spacenet Corp.*, 5 FCC Rcd. 4112; *American Satellite Co.*, 5 FCC Rcd. 1186 (1990).

^{22/} See *EchoStar Satellite Corporation*, 11 FCC Rcd. 3016 (1996).

^{23/} "Trilateral Arrangement Regarding use of the Geostationary Orbit Reached by Canada, Mexico, and the United States," *Public Notice*, Mimeo No. 4406 (Sept. 2, 1988).

IV. APPLICATION FOR LAUNCH AUTHORITY

Pursuant to Section 309 of the Communications Act of 1934, as amended, 47 U.S.C. § 309, and Parts 25 and 100 of the Commission's Rules, 47 C.F.R. Parts 25 and 100, ESC hereby applies for authority to launch a new switchable 32-transponder satellite to the 119.2 ° W.L. orbital position.

This new satellite has already been contracted for by EchoStar from Lockheed Martin Corporation, and its construction is scheduled to be completed soon. The launch of this satellite is currently scheduled for March, 1998.

As discussed above, the attached technical analysis of Dr. Richard Barnett demonstrates that replacement of ESC's existing satellite with the new state-of-the-art 32-transponder satellite will not significantly increase the potential interference for any authorized user of the spectrum nor cause substantial additional interference compared to EchoStar's current authorizations. This analysis also shows that the new satellite will not cause any substantial further departures from the parameters of the Region 2 ITU Plan compared to ESC's existing satellite.

V. APPLICATION FOR OPERATIONAL AUTHORITY

Pursuant to Section 309 of the Communications Act of 1934, as amended, 47 U.S.C. § 309, and Parts 25 and 100 of the Commission's Rules, 47 C.F.R. Parts 25 and 100, EchoStar DBS hereby applies for authority to operate a DBS satellite at the 148° W.L. orbital position.

Much of the technical data relevant to this request has already been submitted by EchoStar DBS in conjunction with its 1996 application for authority to launch and operate a DBS

satellite system at 148° W.L. Dr. Barnett believes that the few technical changes resulting from the operation of a 16-transponder satellite, as opposed to the switchable 32-transponder satellite proposed in the 1996 application, will not substantially affect the previously conducted analysis. Specifically, operation of a 16-transponder satellite at the 148° W.L. orbital position will neither cause additional interference compared to EchoStar's current authorizations at that location nor result in any significant further departures from the parameters of the Region 2 ITU plan compared to the satellite described in EchoStar DBS's 1996 application. Furthermore, as discussed above, the TT&C C-band operations at 148° W.L. will not cause harmful interference and should be reasonably easy to coordinate internationally.

VI. REQUEST FOR WAIVER OF SECTION 100.53 GEOGRAPHIC SERVICE REQUIREMENT

Pursuant to Section 1.3 of the Commission's Rules, 47 C.F.R. § 1.3, EchoStar requests that the Commission grant a partial waiver of Section 100.53 of the Rules, 47 C.F.R. § 100.53, which requires that EchoStar serve Hawaii from 148° W.L. The Commission "may waive any provision of its rules if it determines that good cause has been shown and that a grant of the waiver would not undermine the policies embodied in the rule."^{24/} EchoStar's proposed modifications will *advance* the policies embodied by the geographic service requirement. While Hawaii will not receive service from the EchoStar satellite to be relocated to 148° W.L., the deployment plan proposed in these modification applications will in fact improve service to both Hawaii and Alaska compared to technical compliance with the geographic rule. If this waiver request and EchoStar's other modifications are granted, Alaska will receive almost twice as many

^{24/} *King Broadcasting Company*, 5 FCC Rcd. 3068 (1990); see also *Thomas Radio v. FCC*, 716 F.2d 921 (D.C. Cir. 1983); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

channels of DBS service as it would under the rule. Hawaii too will receive EchoStar's main, full-CONUS offering -- 125-130 cable channels and superstations, which are significantly more desirable than the "niche" channels it would receive under the rule.

A. The Geographic Service Requirement

In 1995, responding to the need to assure availability of DBS service to residents of Alaska and Hawaii, the Commission promulgated two rule provisions designed to achieve that end.^{25/} First, those holding DBS permits or licenses on or before January 16, 1996 must either provide service to Alaska and Hawaii from *any* of their orbital locations or give up their assignments at 148° W.L., 157° W.L., 166° W.L., and 175° W.L.^{26/} Second, those who acquire DBS authorizations after January 16, 1996 must provide service to Alaska and Hawaii from *all* locations where such service is technically feasible.^{27/} EchoStar obtained its DBS authorization for 148° W.L. after the January 16, 1996 cut off date, and is therefore required to serve Alaska and Hawaii from that location.

B. EchoStar's Plan for Service From Multiple Orbital Locations

While the other DBS providers have satellites at one centrally located orbital slot, EchoStar must serve its customers from a combination of CONUS and non-CONUS orbital locations scattered across the geostationary arc. EchoStar must therefore integrate its DBS service from these widely scattered orbital locations while minimizing the inefficient duplication

^{25/} See *DBS Order*, 11 FCC Rcd. at 9762.

^{26/} 47 C.F.R. § 100.53.

^{27/} *Id.*

of programming among its satellites. From 119° W.L., EchoStar can provide service to most of its customers, including all of those in the continental United States. Therefore, EchoStar provides what might be called its "main" programming from that location. This service -- currently about 130 channels of digital video and audio programming -- constitutes the backbone of EchoStar's DBS offerings, including much of its most popular "national" entertainment, information, and sports programming.

EchoStar can only reach a portion of its subscribers from each eastern and western orbital location.^{28/} These locations, therefore, hold limited potential for broad coverage. EchoStar must optimize the service capabilities of these slots by using them to offer local network programming (to the extent permitted by law) or other "niche" or complementary programming -- between 100 and 150 channels of local, regional, and foreign language programming designed specifically for subscribers in a more localized region.

Through the use of multiple dishes, the vast majority of EchoStar subscribers will be able to receive both basic and niche programming. A subscriber in Maryland, for example, will receive basic programming on one dish from 119° W.L. and eastern niche programming on a second dish from 61.5° W.L. Similarly, a subscriber in San Francisco will receive basic programming from 119° W.L., and will soon be able to receive western niche programming on a second dish from one of EchoStar's western orbital locations.

^{28/} EchoStar's eastern orbital location is 61.5° W.L.; its western locations are 148° W.L. and 175° W.L.

C. EchoStar's Proposed Deployment Plan Will Optimize Service to Alaska and Hawaii

Compliance with the Commission's geographic service requirements in this instance would mean that Hawaii and Alaska would receive the local, niche or other complementary programming available from EchoStar's western locations. On a stand-alone basis, this package is less valuable than EchoStar's backbone cable and superstation package available from 119° W.L.

EchoStar, however, is currently unable to provide Alaska and Hawaii with basic programming because its two satellites currently operating at 119° W.L. are not equipped to reach either state (except possibly through the use of large dish antennas). Notably, EchoStar is *not* required to serve Alaska or Hawaii from 119° W.L.^{29/} Nevertheless, the proposed deployment plan will exceed the geographic service requirements imposed on EchoStar, allowing EchoStar to introduce the first-ever, top-quality DBS offering to these faraway states.

As described above, EchoStar seeks authority to launch its new satellite to 119.2° W.L. and relocate one of its operational satellites from 119° W.L. to the 148° W.L. slot. From the 119° W.L. location, the new satellite will be capable of serving Hawaii and Alaska through the use of small receive dishes. EchoStar will thus be able to provide its backbone cable and superstation programming to Alaska and Hawaii almost immediately.

^{29/} 47 C.F.R. § 100.53. *See also DBS Order*, 11 FCC Rcd. at 9762 ("Two licensees (DIRECTV and USSB) are currently operating from their eastern location, and another (EchoStar/Directsat) will begin operations from its eastern location next year. None of these parties has designed satellites capable of providing full service to Alaska and Hawaii from those eastern orbital locations. We will not adopt a rule that would immediately place the only operational systems in violation of our regulations.").

As discussed above, the satellite at 148° W.L. will also provide complementary programming to Alaska by use of slightly larger dishes. Thus, Alaska, which currently has no DBS service, will soon have both basic and niche services from 119° W.L. and 148° W.L. respectively. While that satellite will not serve Hawaii (necessitating the partial waiver requested herein) the net result will be far better service to Hawaii compared to an alternative deployment plan that might be in technical compliance with the geographic service rule. Specifically, Hawaii will receive service from the 119° W.L. location (even though such service is not required by the Commission rules) instead of a complementary offering from 148° W.L. that would be less meaningful on a stand-alone basis. Thus, the technical waiver requested would in fact allow EchoStar to satisfy the spirit of the rule, *exceed* the geographic service requirements that the Commission chose to impose, and ensure improved service to Alaska and Hawaii.

VII. WAIVER PURSUANT TO SECTION 304 OF THE ACT

In accordance with Section 304 of the Communications Act of 1934, as amended, 47 U.S.C. § 304, EchoStar hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

VIII. CONCLUSION

The proposed modifications set forth in this application, as well as the other contemporaneously filed applications, will allow the efficient and rapid introduction of DBS service from the 148° W.L. orbital location several years ahead of EchoStar DBS's required construction and operation milestones. These modifications will allow EchoStar to provide the

first U.S. DBS service to the public in Alaska and Hawaii. Further, they will optimize the strategic deployment of EchoStar's satellites, which becomes increasingly important as the number of EchoStar's in-orbit satellites and the distances among them increase. The proposed modifications also will make available to EchoStar affordable and centrally located in-orbit spare capacity during a critical period of satellite fleet expansion and integration.

Lastly, the proposed modifications will not entail the use of any additional spectrum resources, will not cause significant harmful interference to any authorized user of the spectrum and will not cause additional substantial interference, or cause any substantial further departures from the parameters of the Region 2 ITU Plan, compared to EchoStar's current authorizations.

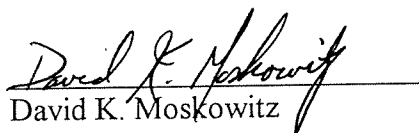
In sum, the requests contained in this application will allow EchoStar better to serve the consuming public.

Since EchoStar currently plans to launch its next satellite in March 1998, EchoStar respectfully requests expedited consideration of the instant application.

Respectfully submitted,

**EHOSTAR SATELLITE CORPORATION
DIRECTSAT CORPORATION
EHOSTAR DBS CORPORATION**

By:



David K. Moskowitz

Senior Vice President

and General Counsel

EchoStar Satellite Corporation

DirectSat Corporation

EchoStar DBS Corporation

90 Inverness Circle East

Englewood, CO 80112

(303) 799-8222

Philip L. Malet
Pantelis Michalopoulos
James M. Talens
STEPTOE & JOHNSON, LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 429-3000

Their Counsel

Dated: December 30, 1997

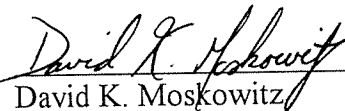
ANTI-DRUG ABUSE CERTIFICATION

Pursuant to Section 1.2002 of the Commission's Rules, 47 C.F.R. Section 1.2002 (1997), Applicants certify that neither the Applicants nor any of their shareholders, nor any of their officers or directors, nor any party to this Application is subject to a denial of Federal benefits pursuant to authority granted in Section 5301 of the Anti-Drug Abuse Act of 1988.

Respectfully submitted,

**EHOSTAR SATELLITE
CORPORATION
DIRECTSAT CORPORATION
EHOSTAR DBS CORPORATION**

By:



David K. Moskowitz
Senior Vice President
and General Counsel

**EchoStar Satellite Corporation
DirectSat Corporation
EchoStar DBS Corporation**
90 Inverness Circle East
Englewood, CO 80112
(303) 799-8222

Dated: December 30, 1997

CERTIFICATION OF PERSON RESPONSIBLE
FOR PREPARING ENGINEERING INFORMATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in the foregoing submission, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is complete and accurate to the best of my knowledge and belief.



Richard J. Barnett, PhD, BSc
Telecomm Strategies, L.L.C.
4806 Fort Sumner Drive
Bethesda, Maryland 20816
(301) 229-0204

Dated: December 30 , 1997

Technical Annex

1. Echostar 104 satellite at 119°W

The technical changes that occur by replacing the Echostar 1 satellite (USABSS-3) at 119°W with the Echostar 104 satellite are discussed in this section. Figure 1 gives the proposed coverage of the Echostar 104 satellite and Figure 2 gives the coverage of the existing Echostar 1 satellite, both from 119°W.

In comparing the two coverages the most notable difference is that the Echostar 104 satellite provides the additional benefit of high quality service to both Alaska and Hawaii. The EIRP to parts of Alaska is in the range of 40.1 to 43 dBW while the EIRP range to Hawaii is 40.1 to 45 dBW. Users will be able to employ small DBS dishes both in Hawaii and in the southern and more populated parts of Alaska. These users will receive more than 120 channels of Echostar's full-CONUS U.S. offering. Moving the Echostar 1 satellite from 119°W to 148°W will provide additional service to Alaska as discussed in section 4 below.

The CONUS coverage of the two satellites is very similar with the peak EIRP value being approximately 53 dBW in certain parts of the US. The Echostar 104 coverage provides more isolation to Caribbean countries than Echostar 1. On the other hand, the EchoStar 104 satellite coverage extends further southwest than Echostar 1 and the EIRP values that were already previously experienced will now apply in a somewhat larger region of this area.

On the whole, recognizing that there are only moderate changes in regions outside of the U.S. it should be possible through the Region 2 BSS Plan modification procedures¹, and coordination if required, to modify the Region 2 Plan to include the parameters of the Echostar 104 satellite network at 119°W.

2. C-band TT&C Operation at 148°W

In this section we will discuss the coordination issues associated with the operation of the Echostar 1 C-band TT&C at the 148°W orbital location.

Echostar 1 has been operating at 119°W and performing C-band TT&C² with no reports of harmful interference from other satellite networks. The move of the Echostar 1 satellite to 148°W will place this satellite in a less congested part of the orbital arc and so coordination should be straightforward. Of course,

¹ These procedures are defined in Article 4 of Appendix 30 of the ITU Radio Regulations.

² The Echostar 1 TT&C operations are performed in the following conventional C-band frequencies:

Uplink: 5926-5927 MHz and 6423-6424 MHz

Downlink: 4198.4-4198.6 MHz and 4199.4-4199.6 MHz.

coordination will be required with nearby existing and planned satellites in the geostationary arc.

The main characteristics of TT&C operations, from an interference perspective, are the use of only small amounts of spectrum³ and large earth stations⁴. As a result the coordination of TT&C carriers with other GSO networks is not normally problematic.

Table 1 shows the list of GSO satellite networks that plan to use C-band within a $\pm 10^\circ$ arc of the 148°W orbital location. This data was extracted from Sections 1 and 9 of the ITU SNL (Space Network List) dated September 1997.

³ The total amount of bandwidth required for the Echostar 1 TT&C signals, in both uplink and downlink directions, is 2.4 MHz.

⁴ The Echostar 1 TT&C earth station uses an antenna of greater than 9 m in diameter.

Table 1. List of C-band networks $\pm 10^\circ$ from 148°W

NAME	LONG	ADM	AREC	APUB	CREC	CPUB	FREQ 1	FREQ 2
EXPRESS-12	-155.00	RUS	07.01.91	19.11.91	13.10.92	22.06.93	3400.00	4200.00
EXPRESS-12	-155.00	RUS	07.01.91	19.11.91	13.10.92	22.06.93	5730.00	6520.00
STATSIONAR-26	-155.00	URS	08.18.87	27.10.87	28.03.88	02.08.88	3400.00	3945.00
STATSIONAR-26	-155.00	URS	08.18.87	27.10.87	28.03.88	02.08.88	5730.00	6270.00
N-SAT-152W	-152.00	J	02.05.97*				3400.00	4200.00
N-SAT-152W	-152.00	J	02.05.97*				5850.00	6725.00
N-SAT-150W	-150.00	J	02.05.97*				3400.00	4200.00
N-SAT-150W	-150.00	J	02.05.97*				5850.00	6725.00
Echostar 1	-148.00	USA					4198.40	4198.60
							4199.40	4199.60
							5926.00	5927.00
							6423.00	5424.00
N-SAT-148W	-148.00	J	02.05.97*				3400.00	4200.00
N-SAT-148W	-148.00	J	02.05.97*				5850.00	6725.00
N-SAT-145W	-145.00	J	02.05.97*				3400.00	4200.00
N-SAT-145W	-145.00	J	02.05.97*				5850.00	6725.00
N-SAT-143W	-143.00	J	02.05.97*				3400.00	4200.00
N-SAT-143W	-143.00	J	02.05.97*				5850.00	6725.00
INMARSAT-2-POR-EAST	-142.00	G/IN M	05.11.96*				6425.00	6443.00
N-SAT-141W	-141.00	J	02.05.97*				3400.00	4200.00
N-SAT-141W	-141.00	J	02.05.97*				5850.00	6725.00
US SATCOM 1-R	-139.00	USA		22.06.82	13.12.83	19.06.84	3700.00	4200.00
US SATCOM 1-R	-139.00	USA		22.06.82	13.12.83	19.06.84	5925.00	6425.00
USASAT-22I	-139.00	USA	03.20.92	25.08.92	20.09.92	18.05.93	3700.00	4200.00
USASAT-22I	-139.00	USA	03.20.92	25.08.92	20.09.92	18.05.93	5925.00	6425.00

* Section 9 of SNL September 1997 has not been reviewed by the ITU for completeness.

As shown in Table 1 there are several Japanese satellite networks within a $\pm 10^\circ$ of 148°W . One of these networks ("N-SAT-148W") would be collocated with Echostar 1. Networks from Administrations other than Japan are at least 5° away and the closest US satellite network, USASAT-22I, is 9° away. Coordination with these non-Japanese networks will be minimal and may not even be necessary, depending on the results of DeltaT/T calculations.

It should be noted that the Advance Publications for the six Japanese satellites included in Table 1 were only recently filed with the ITU in May 1997. Therefore these Japanese satellite networks are clearly only at the initial design stage and so they should retain considerable flexibility for coordination, particularly bearing in mind the modest spectrum requirements of the Echostar 1 TT&C signals. Furthermore, the TT&C signals of Echostar 1 are very close to the transition between conventional and extended C-band and therefore should be able to be accommodated in the guard bands between transponders in the Japanese

networks. Therefore we believe that successful coordination of the Echostar 1 TT&C transmissions with these Japanese networks will not be problematic, and should be commenced as soon as possible.

During the drift of Echostar 1 from the 119°W orbital location to the 148°W orbital location it will be necessary for EchoStar to coordinate with operational GSO C-band networks that could potentially experience interference. This orbit maneuver is limited in time and the potential interference effects will be of short duration due to the movement of the satellites relative to each other during this period. Potential interference may occur from the Echostar 1 telecommand signal when the main beam of the tracking Echostar 1 TT&C earth station is directed towards an operational GSO satellite. Another potential interference path will be from the Echostar 1 satellite telemetry signal as the Echostar 1 satellite passes through the main beam of another GSO receiving earth station. In order to avoid these potential interference occurrences EchoStar will determine, prior to beginning the satellite drift maneuver, which GSO orbital locations may be affected. Echostar will then coordinate with the potentially affected GSO satellite operators and if necessary will cease TT&C operations for the short duration of these in-line events.

3. Echostar 1 satellite at 148°W

This section discusses the proposed operation of the Echostar 1 satellite at the 148°W orbital location, as shown in Figure 3.

Echostar 1 is a 16 transponder satellite, whereas the satellite that was planned to be operated at 148°W would have had 32 transponders. The ITU submissions already prepared for the DBS use of the 148°W orbital position also refer to the use of all 32 channels.

The move of Echostar 1 to 148°W will provide additional coverage of Alaska that is not now possible from the same satellite operating at 119°W. The EIRP over the southern and most populated parts of Alaska is approximately 45 dBW, allowing the use of relatively small receive earth stations. This will complement the coverage of Alaska from the Echostar 104 satellite at 119°W, as described in section 1 above. Because of the shape of the beam on this existing in-orbit satellite it will not be possible to provide service to Hawaii from this orbital location with this satellite. However service to Hawaii will be provided by the Echostar 104 satellite from the 119°W orbital location, as described in section 1 above.

Figure 3 shows that the Echostar 1 satellite at 148°W will partly cover Mexico, but this should not cause interference to that country's BSS assignments since Mexico's closest assignment is at 127°W, more than 20° away. In fact no Region 2 BSS assignment should be affected since the closest, the Canadian

assignment at 138 °W, is 10° away. Since both Mexico and Canada are each assigned all 32 BSS channels, and they have submitted modifications to the Region 2 BSS Plan indicating their intent to use BSS systems, it is unlikely that these countries would also implement terrestrial services in this band. Therefore, it should be possible through the Region 2 BSS Plan modification procedures, and coordination if required, to modify the Region 2 Plan to include the parameters of the EchoStar 1 satellite network from the 148°W orbital position.

4. Elevation Contours from Alaska and Hawaii for 148°W and 175°W

Figures 4 and 5 below show the 10°, 20°, 30°, 40°, 50° and 60° elevation contours for 148°W and 175°W respectively. The elevation angles to the western portion of the U.S. are uniformly higher from the 148°W orbital location than for the 175°W orbital location. These higher elevation angles will allow superior coverage of a larger portion of the U.S. population from 148°W because the attenuation of the signal due to path loss will be less.

Figure 1:
Echostar 104 Satellite EIRP Contours
from 119°W Orbital Location

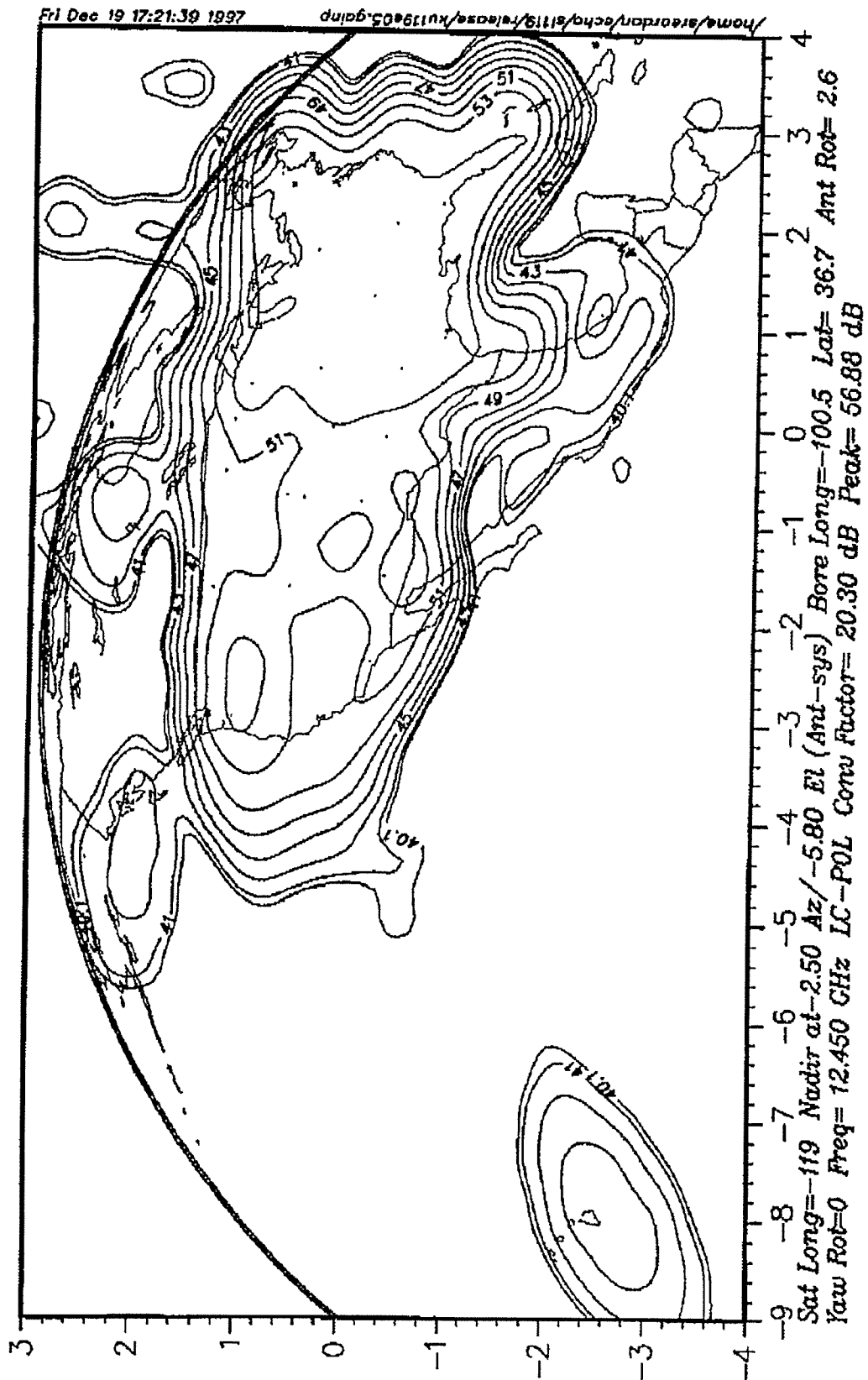


Figure 2:
Echostar 1 Satellite EIRP Contours
from 119°W Orbital Location

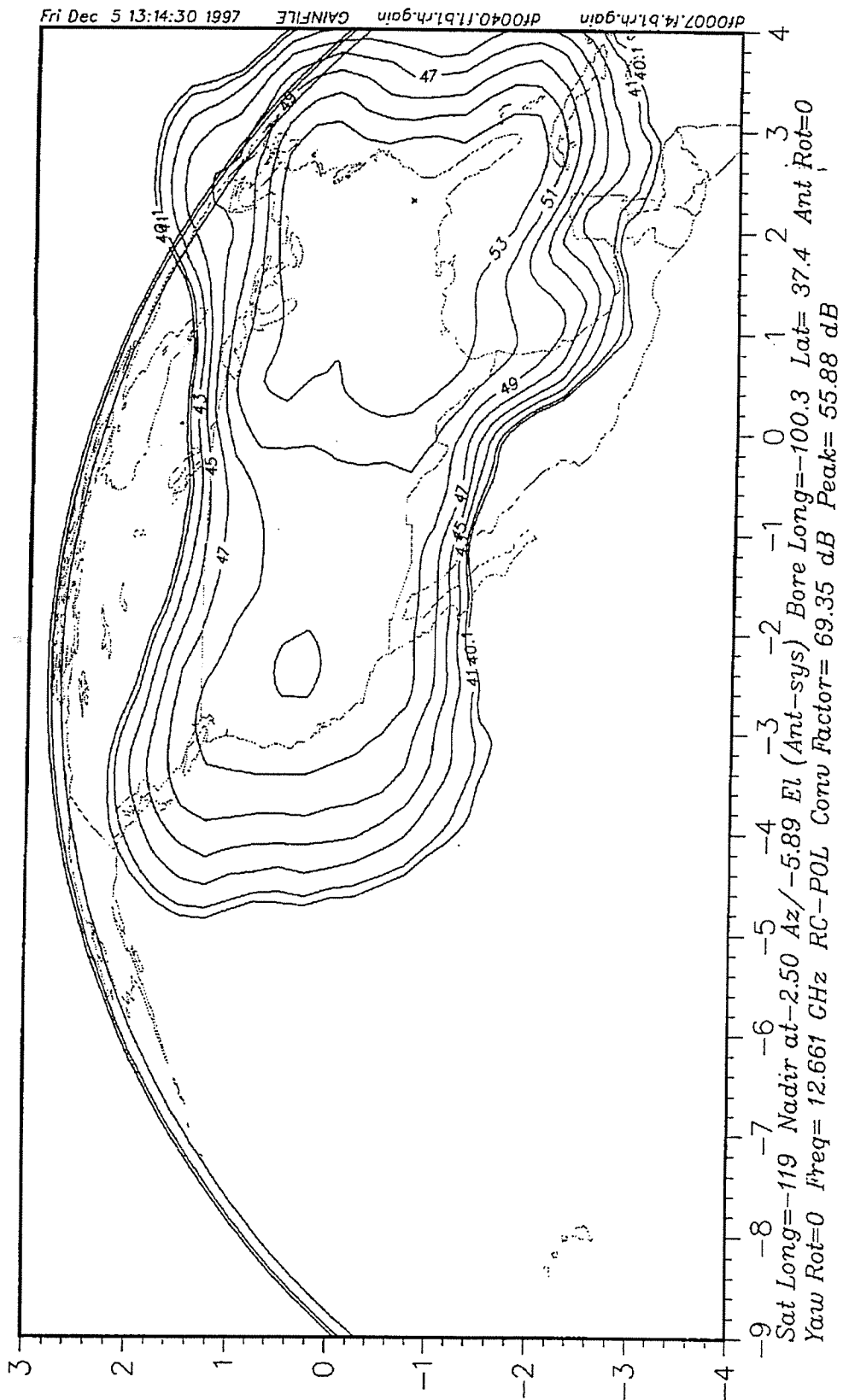


Figure 4: 10°, 20°, 30°, 40°, 50° and 60° Elevation Contours from 148° W

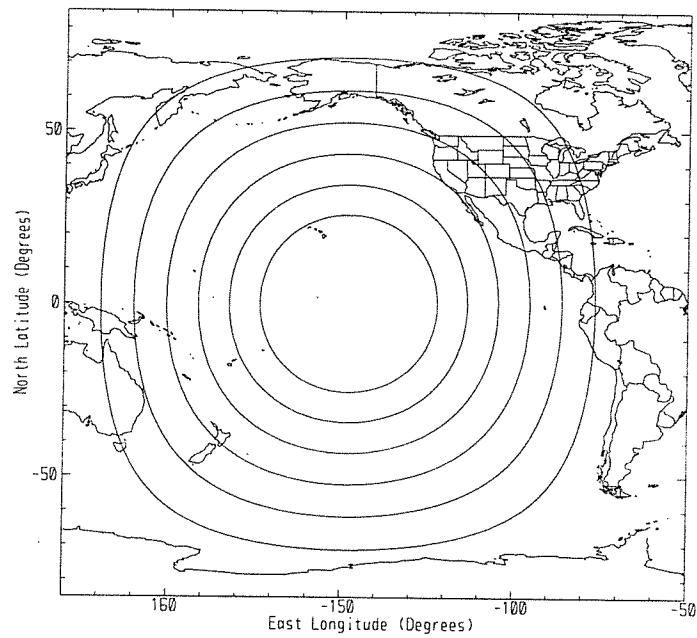


Figure 5: 10°, 20°, 30°, 40°, 50° and 60° Elevation Contours from 175° W

